

This Method of Operation was prepared from Issue 17 of Drawing ES-226309.

#### METHOD OF OPERATION

##### Panel System - Selector Time Alarm

#### DEVELOPMENT

##### 1. PURPOSE OF CIRCUIT

1.1 This circuit is used with selector circuits to give an alarm and light a pilot lamp when the calling subscriber fails to replace the receiver on the switchhook within a predetermined period of time or when the selector remains in a selecting position for an abnormal period of time.

##### 2. WORKING LIMITS

2.1 None

#### OPERATION

##### 3. PRINCIPAL FUNCTIONS

3.1 To close an alarm circuit and light an aisle pilot lamp whenever a selector remains in certain positions for an abnormal length of time.

3.2 To release finals from "awaiting called subscriber disconnect" position, except when the final test circuit is testing final (L) relay.

##### 4. CONNECTING CIRCUITS

4.1 Miscellaneous alarm circuit.

4.2 Final automatic test circuit.

4.3 This circuit connects with any selector use in a sender selector type office.

#### DESCRIPTION OF OPERATION

##### 5. ALARM DUE TO SELECTOR SEQUENCE SWITCH DELAY

When a selector advances to a position in which it is allowed to remain only for a predetermined period of time, ground in the selector circuit operates the (PS-1) relay ("X" wiring) or the (PS-2) relay

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("Y" wiring) to battery on the PU brush and normal terminal. The (PS-1) or (PS-2) relay operated, locks to ground in the selector circuit and operates the (STP) relay. The (STP) relay operates starts the 200 type selector stepping under control of the interrupter. When the 200 type selector reaches a terminal connected to a B lead, the (S) relay operates from battery on the PU brush to ground on the (PS-1) or (PS-2) relay. The (S) relay operated, (a) locks to ground on the (PS-1) or (PS-2) relay, (b) lights the 2-G lamp, (c) operates the (A) relay, (d) releases the (STP) relay. The (A) relay operated lights the aisle pilot and floor alarm board pilot ("W" wiring), or the floor alarm board pilot and main alarm board pilot ("Z" wiring). The (STP) relay released restores the 200 type selector to the next normal terminal. Normal terminals are blank on the ON arc and have "A" leads on the PU arc.

When Fig. B is used with final selector circuits, the operation of the (S) relay also removes the locking ground for the (L) relays of any finals in "awaiting called subscriber disconnect" position, thereby restoring these finals to normal.

When Fig. C is used with final selector circuits, the (T1) relay operates instead of the (S) relay, when the 200 type selector reaches a terminal connected to a "B" lead. The (T1) relay operating, in turn operates the (T2) relay which operates the (T3), (T4), (T5) and (T6) relays in succession. These 6 relays open the circuits of the (L) relays of 30 finals to the ring sides of the lines in the "time out" position, thereby releasing any finals on one side of a frame which may be in the "time out" position. The (T6) relay operating, also operates the (S) relay, which locks to ground on the (PS2) relay and releases the (STP) and (T1) relays. The (STP) relay released, restores the 200 type selector to the next normal terminal. The (T1) relay released, in turn releases the (T2), (T3), (T4), (T5) and (T6) relays in succession. The (PS2) relay releases, on the removal of the time alarm ground from the final, due to the operation of one of the (T1) to (T6) relays inclusive. The (PS2) relay releasing releases the (S) relay, and the circuit is restored to normal.

When "N" wiring is used, the operation of the (TF) relay when the final automatic test circuit is testing a final (L) relay, opens the circuit of the (S) or (T1) relay, preventing this relay from operating. Under this condition, the (STP) relay remains operated and the 200 type selector continues to advance under control of the interrupter until the final is released. When the final test circuit completes its test, the (TF) relay releases.

6. RETURNING TO NORMAL WHEN SELECTOR ADVANCES

When the selector sequence switch advances, ground is removed from the selector lead releasing the (PS-1) or (PS-2) relay. The (PS-1) or (PS-2) relay released, releases the (S) relay in turn releasing the (A) relay and extinguishing the lighted lamps.

7. RETURNING TO NORMAL WHEN SELECTOR ADVANCES WITH TIME LIMIT

Should the selector sequence switch advance before the 200 type selector had advanced sufficiently to operate the (S) relay, the (PS-1) or (PS-2) relay releases preventing the (S) relay from operating and releasing the (STP) relay. The (STP) relay released steps the 200 type selector to the next normal terminal through the ON brush and strapped terminals.

8. EXTINGUISHING LAMPS WITH 92-A KEY

With "X" wiring should the selector sequence switch fail to advance within the required period of time, the lighted lamps may be extinguished by the operation of the 92-A key thus operating the (SW) relay. The (SW) relay operated, operates the (B) relay and releases the (PS-1) relay. The (PS-1) relay released extinguishes the lighted lamps as in Paragraph 6. The (B) relay operated holds the (SW) relay operated thus holding the (B) relay operated until the selector sequence switch advances. When the selector sequence switch advances the (B) relay releases releasing the (SW) relay thus restoring the circuit to normal.

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